

What Is One-Pedal Driving?



One-pedal driving is a feature on some electric vehicles where, under most circumstances, you use only the accelerator pedal to both speed up and slow down. When activated, the brake pedal only comes into play if you need to make a hard stop.

One-pedal driving is one of the unsung benefits of some EVs, and once you've experienced it, you're going to feel spoiled.

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While the term one-pedal driving is nicely descriptive, how it works and the theory behind it are a little more complicated. How does the car slow

down if you don't use the brakes?

It Starts With Regenerative Braking

One-pedal driving is largely made possible by the vehicle's regenerative braking system — often shortened to regen— used in modern hybrids, plug-in hybrids and pure EVs, though it's mostly the last where true one-pedal driving has become a reality.

Hybrids, PHEVs and EVs employ an electric motor for part or all of their propulsion. And it's the electric motor, in a sense, that allows for regenerative braking.

The concept hinges on the principle that an electric motor (which provides propulsion) and a generator (which creates electricity) are, for all practical purposes, mechanically the same. An electric motor is fed electricity to create rotary motion, while a generator is fed rotary motion to create electricity. In a vehicle, that rotary motion is supplied by the turning wheels and the vehicle's momentum. Therefore, the motor and generator are the same unit, often referred to as the motor-generator.

Although at least some regenerative braking is experienced in hybrids and PHEVs, not many offer full one-pedal driving. So we'll focus on pure EVs — several of which do offer it — for this example.

Full One-Pedal Driving

While your EV is moving down the road, the wheels are being powered by an electric motor. When you lift off the accelerator pedal, the vehicle continues due to its momentum turning the wheels.

But when you lifted off the accelerator pedal, the motor was switched over

to become a generator. While this is largely done to help recharge the battery, a side effect is that the effort it takes to turn what is now a generator also helps slow the vehicle down without applying the brakes. In some EVs, fully lifting off the accelerator pedal can slow the vehicle far more quickly than you'd normally want to in traffic.

Since the degree of regen depends on how far and how fast you lift off the accelerator pedal, how quickly you slow down can be modulated with your foot. While this modulation takes some practice to slow down smoothly, it quickly becomes second nature. Many vehicles, such as the [Kia EV6](#), allow you to adjust the severity of the brakes.

Once you get used to it, you may drive for days without ever having to hit the brakes. Note, however, that the brakes may be gently applied automatically at crawling speeds — by the vehicle's computer — in order to come to a complete stop. Many EVs, such as the [Chevrolet Bolt EUV](#), have a button that enables this feature to work down to a stop.

As mentioned, this can really spoil you — particularly if you drive frequently in stop-and-go traffic — as it can significantly take strain off your leg. So perhaps the biggest drawback to one-pedal driving is remembering how to drive using two pedals.

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